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10/669,559	09/25/2003	Koji Kameyama	243293US0	4007

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EXAMINER

DOE, JANIS L.

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 09/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/669,559

**Applicant(s)**

KAMEYAMA ET AL.

**Examiner**

Janis L. Dote

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/19/03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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1. The information disclosure statement, in particular the "List of Related Cases," filed on Dec. 19, 2003, does not fully comply with the requirements of 37 CFR 1.98 because: it fails to comply with 37 CFR 1.98(a)(2)(iii), which requires legible copies of those portions of the copending US application which caused it to be listed in the "List of Related Cases."

Since the submission appears to be *bona fide*, applicants are given **ONE (1) MONTH** from the date of this notice to supply the above mentioned omissions or corrections in the information disclosure statement. The examiner notes that if applicants have a postcard receipt stating that the USPTO did receive copies of the documents, applicants should also provide a copy of the receipt so that there is no ambiguity to the record that applicants did provide copies of the missing documents.

NO EXTENSION OF THIS TIME LIMIT MAY BE GRANTED UNDER EITHER 37 CFR 1.136(a) OR (b). Failure to timely comply with this notice will result in the above mentioned information disclosure statement being placed in the application file with the noncomplying information **not** being considered. See 37 CFR 1.97(i).

2. The disclosure is objected to because of the following informalities:

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The use of trademarks, e.g., Henschel mixer [sic: HENSCHEL mixer] at page 3, line 16, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

In claim 6, the phrase "a substance derived from a resin binder component" lacks antecedent basis in the specification. See page 12, lines 8-9, of the specification, which discloses a "substance originated from the resin binder component."

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4. The examiner notes that the instant specification at page 19, lines 9-11, defines the "amount of from 1 to 4 %" recited in instant claim 6 as referring to a "content(%) of substances having a molecular weight [number average molecular weight] of 500 or less as % by area of the corresponding area in the chart [of a gel-permeation chromatogram] obtained from an RI (refractive index) detector."

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 2-4, 6, 8, 10, and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 2 is drawn to a "toner according to claim 1, wherein the toner is used as a toner for non-contact fixing."

Claim 3 is drawn to a "toner according to claim 1, wherein the toner is used as a toner for a two-component development."

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Claim 4 is drawn to a "toner according to claim 1, wherein the toner is used in a high-speed apparatus with a linear speed of 400 mm/sec or more."

Claims 2-4 provide for the use of the toner of claim 1, but, since the claims do not set forth any steps involved in the methods, it is unclear what methods applicants intend to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 6 is indefinite in the phrase "a substance derived from a resin binder component" (emphasis added) because it is not clear what is the scope of the term "derived." The specification does not define the term "a substance derived from a resin binder component." Rather, the specification at page 12, lines 8-9, discloses a "substance originated from the resin binder."

Claim 8 is indefinite in the phrase "the silica having a BET specific surface area of 50 m<sup>2</sup>/g or more is used" (emphasis added) for lack of unambiguous antecedent basis with respect to claim 1. Claim 1 recites the presence of "fine inorganic particles having a BET specific surface area of 30 m<sup>2</sup>/g."

Claim 1 does not recite that the toner of claim 1 comprises a

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"silica having a BET specific surface area of 50 m<sup>2</sup>/g or more" as recited in instant claim 8.

Claim 10 is indefinite in the phrase "method for forming fixed images, comprising the step of applying the toner as defined in claim 1 to a non-contact fixing apparatus" because it is not clear what is being fixed. Nor is it clear to what the toner is being applied. Nor is it clear how merely applying a toner to a non-contact fixing apparatus forms a fixed image. Claim 10 does not recite any of the steps necessary to form a fixed image.

Claim 11 is indefinite in the phrase "method for forming fixed images, comprising the step of applying the step of applying the toner as defined in claim 1 to a high-speed apparatus with a linear speed of 400 mm/sec or more" because it is not clear what is being fixed. Nor is it clear to what the toner is being applied. Nor is it clear how merely applying a toner to a non-contact fixing apparatus forms a fixed image.

Furthermore, the claim appears to a "use" claim. Claims 10 and 11 do not set forth any steps involved in the method for forming fixed images. It is unclear what method or process applicants intend to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

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7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. Claims 2-4, 10 and 11 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example Ex parte Dunki, 153 USPQ 678 (Bd.App. 1967) and Clinical Products, Ltd. v. Brenner, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

9. The examiner has interpreted the use language recited in instant claims 2-4 as mere statements of "intended use." Rejections based on the examiner's interpretation are set forth infra.

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the



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differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

12. Claims 1-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,707,771 (Matsunaga) combined with US 6,156,471 (Kobori).

Matsunaga discloses a magnetic toner comprising toner particles comprising a binder resin and a magnetic powder as a black colorant, and externally added particles. The binder resin comprises a "low-modulus" polyester resin and a "high-modulus" polyester resin. See example 7 at col. 25. The toner has a storage modulus at 100°C ( $G'_{100}$ ) of  $3.9 \times 10^4$  Pa, and a ratio of the storage modulus at 60°C ( $G'_{60}$ ) to the storage modulus at 70°C ( $G'_{70}$ ) of 78.4. See Table 1 at col. 27, example 7. Matsunaga discloses that the  $G'_{100}$  may be in the range of  $1 \times 10^4$  to  $5 \times 10^4$  Pa. Col. 4, line 44. The  $G'_{100}$  of

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$3.9 \times 10^4$  Pa and  $G'_{100}$  range disclosed by Matsunaga are within the numerical range of " $7 \times 10^4$  Pa or less" recited in instant claim 1. Matsunaga determines the storage moduli with the visco-elasticity measurement apparatus Rheometer FDA-II, available from Rheometrics Co., using parallel plates having diameters of 7.9 mm for a "high modulus sample" or 25 mm for a "low modulus" sample. Col. 20, lines 1-9. Matsunaga does not state that the storage modulus at  $100^\circ\text{C}$  ( $G'_{100}$ ) of  $3.9 \times 10^4$  Pa was determined using parallel plates having a diameter of 25 mm as recited in instant claim 1. The instant specification at page 7, lines 17-18, discloses that "when a 7.9 mm parallel plate is used for determining a value of  $G'_{100}$  [storage modulus], the determination values are varied and unreliable." As discussed above, the value of  $3.9 \times 10^4$  Pa is within the range of " $7 \times 10^4$  Pa or less" recited in instant claim 1. Accordingly, it is reasonable to presume that the toner storage modulus ( $G'_{100}$ ) of  $3.9 \times 10^4$  Pa reported by Matsunaga would have the same value as that determined using parallel plates having a diameter of 25 mm. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Matsunaga does not disclose that the toner has a  $G'_{60}$  and a  $G'_{70}$  as recited in instant claim 1. However, as discussed above,

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Matsunaga discloses that the toner has a ratio of  $G'_{60}/G'_{70}$  of 78.4. Matsunaga teaches that a ratio of  $G'_{60}/G'_{70}$  is required to be at least 30. Col. 5, lines 8-17. Matsunaga further teaches that  $G'_{60}$  of the toner may be more preferably  $1 \times 10^7$  to  $5 \times 10^9$  Pa, further preferably  $2 \times 10^7$  to  $4 \times 10^8$  Pa. Col. 5, lines 20-21. Both preferred ranges overlap the  $G'_{60}$  range of  $3 \times 10^8$  to  $1 \times 10^9$  Pa recited in instant claim 1. The upper limit,  $4 \times 10^8$  Pa, of the range  $2 \times 10^7$  to  $4 \times 10^8$  Pa, is within the range of  $G'_{60}$  recited in instant claim 1. Matsunaga also teaches that the  $G'_{70}$  of the toner may preferably be at most  $7 \times 10^6$  Pa. Col. 5, lines 27-28. The upper limit,  $7 \times 10^6$  Pa, of Matsunaga's  $G'_{70}$  range is within the  $G'_{70}$  range of  $7 \times 10^6$  to  $3 \times 10^8$  Pa recited in instant claim 1. According to Matsunaga, a toner having a  $G'_{60}$  below  $7 \times 10^6$  Pa is "advantageous in fixation at low temperatures, but is liable to show inferior anti-blocking and anti-offset characteristics." A  $G'_{60}$  in excess of  $5 \times 10^8$  Pa is "advantageous in respects of anti-blocking and anti-offset characteristics but the low-temperature fixability of the toner can be problematic." Col. 5, lines 20-26.

Similarly, according to Matsunaga, a  $G'_{70}$  in excess of  $7 \times 10^6$  Pa may lead to a lower fixability at low temperature. Col. 5, lines 29-31. Thus, it appears that the prior art recognizes

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that the values of  $G'_{60}$  and  $G'_{70}$  are result-effective variables, the variation of which is presumably within the skill of the ordinary worker in the art.

According to Matsunaga, the toner having the rheology properties taught by Matsunaga has "good fixability even in a small particle size and an increased content of colorant, particularly a magnetic material." The toner has "good fixability for wide ranges of apparatus including low-speed apparatus to high-speed apparatus" and also shows "excellent anti-offset characteristic, anti-block characteristic and flowability." The toner further provides "good quality fixed images even at halftone image portions," and "fog-free high-density toner images for wide ranges of apparatus including low-speed apparatus to high-speed apparatus." Col. 3, lines 33-55.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Matsunaga, to adjust, through routine experimentation, the amounts of the components of the toner particles, e.g., the two polyester resins, magnetic powder, etc., in example 7 of Matsunaga, such that the resulting toner particles have a  $G'_{60}$  and  $G'_{70}$  within the ranges recited in instant claim 1, and have the  $G'_{100}$  and ratio  $G'_{60}/G'_{70}$  within the teachings of Matsunaga, because that

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person would have had a reasonable expectation of successfully obtaining a toner having the properties taught by Matsunaga.

Matsunaga does not exemplify a toner comprising the fine inorganic particles recited in the instant claims. However, Matsunaga discloses that flowability-improving agents, e.g., silica, may be blended with the toner particles to improve the flow of the toner. Col. 15, lines 27-28.

Kobori discloses externally added components comprising inorganic particles A-4 and inorganic particles ii. See Table 3 at col. 29, example 4. The inorganic particles ii are silica particles having a BET specific surface area of  $95 \text{ m}^2/\text{g}$ . See col. 28, lines 42-58, and Table 2 at col. 35, inorganic particles ii. Inorganic particles ii meet the silica particles having a BET specific surface area of  $50 \text{ m}^2/\text{g}$  recited in instant claim 8. The inorganic particles A-4 have a BET specific surface area of  $12.8 \text{ m}^2/\text{g}$ . See Table 1 at col. 33, inorganic particles A-4. The BET specific surface area of  $12.8 \text{ m}^2/\text{g}$  is within the range of " $30 \text{ m}^2/\text{g}$  or less" recited in instant claim 1. According to Kobori, toners comprising the externally added components described above provide images with stable image density and little fog within environments ranging from high temperature and high humidity to low temperature and low

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humidity after many repeated runs. Col. 3, lines 47-52, and Tables 3 and 4, example 4.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Kobori, to add the externally added components disclosed by Kobori to the toner rendered obvious over the teachings of Matsunaga because that person would have had a reasonable expectation of successfully obtaining a toner that provides images with stable image density and little fog within environments ranging from high temperature and high humidity to low temperature and low humidity after many repeated runs, as disclosed by Kobori.

Matsunaga does not disclose that its toner used for non-contact fixing, for a two-component development, or in a high-speed apparatus with a linear speed of 400 mm/sec or more, as recited in instant claims 2-4, respectively. However, the recitations "for non-contact fixing," "for a two-component development," and "toner used in a high-speed apparatus . . ." recited in instant claims 2-4, respectively, are merely statements of intended use that do not distinguish the instantly claimed toner from the toner rendered obvious over the combined teachings of Matsunaga and Kobori.

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13. Claims 1-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga combined with US 6,248,495 B1 (Inokuchi).

Matsunaga renders obvious a toner as described in paragraph 12 above, which is incorporated herein by reference.

Matsunaga does not exemplify a toner comprising the fine inorganic particles as recited in the instant claims. However, Matsunaga discloses that flowability-improving agents, e.g., silica, may be blended with the toner particles to improve the flow of the toner. Col. 15, lines 27-28.

Inokuchi teaches amorphous spherical silica microparticles having a BET specific surface area of  $23.3 \text{ m}^2/\text{g}$ . See Table 2 at col. 7, example E1. The amorphous spherical silica meets the inorganic fine powder having a BET specific surface area of  $30 \text{ m}^2/\text{g}$  or less recited in instant claims 1 and 7. According to Inokuchi, when the amorphous spherical silica microparticles are blended with toner particles, the resulting toner has improved "fluidity, anti-caking and cleaning characteristics as well as stable and uniform charging characteristics." The toner is "effective for high-quality and high-speed duplication." Col. 1, lines 45-48; col. 7, lines 25-32; and Table 2, example E-1.

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It would have been obvious for a person having ordinary skill in the art to use the amorphous spherical silica microparticles taught by Inokuchi as the flowability-improving agent in the toner rendered obvious over the teachings of Matsunaga because that person would have had a reasonable expectation of successfully obtaining a toner that has improved "fluidity, anti-caking and cleaning characteristics as well as stable and uniform charging characteristics," and is "effective for high-quality and high-speed duplication" as disclosed by Inokuchi.

Matsunaga does not disclose that its toner used for non-contact fixing, for a two-component development, or in a high-speed apparatus with a linear speed of 400 mm/sec or more, as recited in instant claims 2-4, respectively. However, the recitations "for non-contact fixing," "for a two-component development," and "toner used in a high-speed apparatus . . ." recited in instant claims 2-4, respectively, are merely statements of intended use that do not distinguish the instantly claimed toner from the toner rendered obvious over the combined teachings of Matsunaga and Inokuchi.

14. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga combined with Kobori as applied to



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claim 1 above, further combined with Diamond, A.S., ed.,  
Handbook of Imaging Materials, pp. 162-163 (Diamond).

Matsunaga combined with Kobori renders obvious a toner as described in paragraph 12 above, which is incorporated herein by reference.

Although Matsunaga exemplifies toners comprising a magnetic powder, Matsunaga teaches that the colorant in the toners may be a non-magnetic colorant, such as carbon black, a magenta pigment, yellow pigment, and a cyan pigment. Col. 14, lines 19-21, and 40-46; and col. 14, line 57, to col. 15, line 26.

Matsunaga does not disclose that the non-magnetic color toner can be used in a two-component developer as recited in instant claim 9. However, the addition of a carrier to a toner to form a two-component developer composition is well-known in the art. Diamond discloses that mixing a toner with carrier particles to charge toner particles is well-known in the art. The charged toner particles are brought in contact with the electrostatic latent image of a photoconductor to develop the latent image to form a toned image. See page 162, lines 26-34.

Kobori teaches that its externally added components may be used in toners for two-component developers comprising a toner and a carrier. Kobori, col. 24, lines 4-17.

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It would have been obvious to a person having ordinary skill in the art, in view of the teachings of Diamond and Kobori, to mix the toner rendered obvious over the combined teachings of Matsunaga and Kobori with a well-known carrier, because that person would have had a reasonable expectation of successfully obtaining a two-component developer that provides charged toner particles capable of developing an electrostatic latent image on a photoconductor to form a toned image.

15. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga combined with Inokuchi as applied to claim 1 above, further combined with Diamond.

Matsunaga combined with Inokuchi renders obvious a toner as described in paragraph 13 above, which is incorporated herein by reference.

Although Matsunaga exemplifies toners comprising a magnetic powder, Matsunaga teaches that the colorant in the toners may be a non-magnetic colorant, such as carbon black, a magenta pigment, yellow pigment, and a cyan pigment. Col. 14, lines 19-21, and 40-46; and col. 14, line 57, to col. 15, line 26.

Matsunaga does not disclose that the non-magnetic color toner can be used in a two-component developer as recited in

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instant claim 9. However, the addition of a carrier to a toner to form a two-component developer composition is well-known in the art. The discussion of Diamond in paragraph in paragraph 14 above is incorporated herein by reference.

Inokuchi teaches that its amorphous spherical silica microparticles may be used in toners for two-component developers comprising a toner and a carrier. Inokuchi, col. 4, lines 5-16.

It would have been obvious to a person having ordinary skill in the art, in view of the teachings of Diamond and Inokuchi, to mix the toner rendered obvious over the combined teachings of Matsunaga and Inokuchi with a well-known carrier, because that person would have had a reasonable expectation of successfully obtaining a two-component developer that provides charged toner particles capable of developing an electrostatic latent image on a photoconductor to form a toned image.

16. Claim 6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Matsunaga does not teach or suggest a toner comprising a substance having a number-average molecular weight as recited

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instant claim 6. Nor is there enough evidence on the present record to reasonably presume that the toner rendered obvious over the teachings of Matsunaga comprises said substance in an amount of "1 to 4%" as recited in instant claim 6.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry of papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JLD  
Sep. 23, 2004

*Janis L. Dote*  
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1700